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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/413,552	10/06/1999	DOUGLAS A. HAWKS	50944.2300	2160

7590 07/29/2004
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EXAMINER

NGO, HUNG V

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary

Application No.

09/413,552

Applicant(s)

HAWKS ET AL.

Examiner

Hung V Ngo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,21-27,29 and 31-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,21-27,29 and 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 21, 22, 24, 26, 27, 29, 31, 32, 33/31, 33/32 are rejected under 35 U.S.C. 102(b) as being anticipated by Moline.

Moline discloses a microelectronic device package comprising: a die attach pad (16), said pad having a bottom surface; a plurality of substantially flat electrical connectors (12, 14) formed about a perimeter of said die attach pad, wherein said connectors are configured to couple a device to a substrate (30); and an encapsulant (28) surrounding a portion of said electrical connectors and a portion of said die attach pad, wherein said bottom surface of said die attach pad is substantially free of encapsulant, a coupling of a plurality of wires (26, 26') from said device package to one of said connectors (re claim 1).

Re claim 2, wherein said connectors and said pad are formed from a leadframe (Fig 2).

Re claim 21, wherein said pad is not offset from said connectors (Fig 3a).

Re claim 22, wherein said pad is configured to bonded to a device (20).

Re claim 24, wherein bottom surface of said connectors is substantially free of encapsulant (Fig 3a).

Re claim 26, wherein the conductive path length through said connector is the thickness of said connector (Fig 3a).

Re claim 27, wherein said connectors and said die pad feature undercut regions to assist in attachment of said encapsulant (Fig 3a).

Re claim 29, wherein portions of a device (20) are electronically coupled to said die pad (Fig 3a).

Re claim 31, wherein said connectors are formed from a metal frame (Fig 2).

Re claim 32, wherein said pad is formed from a metal frame (Fig 2).

Re claims 33/31, 33/32, wherein said frame is formed of copper (col. 8, lines 20-25).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

Claims 23, 34/31, 34/32, are rejected under 35 U.S.C. 103(a) as being unpatentable over Moline

The teaching of Moline as discussed above further include the wire made of gold (col. 5, lines 5-10) but does not disclose the wire being having a diameter of

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approximately 25 microns (re claim 23), wherein said frame has a thickness of approximately 200 microns (re claim 34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wire of Moline by employing the diameter of 25 micron or to modify the frame of Moline by employing the thickness of 200 microns, since such a modification would have involved a mere change in the size of the wire or frame. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moline in view of Kinghorn

The teaching of Moline as discussed above does not disclose the frame is coated with about 10 micro inches of palladium.

Kinghorn teaches that it is known to coat the frame with about 10 micro inches of palladium (col. 6, lines 28-37) for enhancing the bonding of the internal leads to bonding wires (col. 1, lines 10-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the palladium coating of 10 micro inches with the frame of Moline for enhancing the bonding of the internal leads to bonding wires.

Claims 25, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moline

The teaching of Moline as discussed above does not disclose said device being bonded to said pad using conductive epoxy and the encapsulant made of epoxy. It

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would have been obvious to one having ordinary skill in the art at the time the invention was made to use conductive epoxy for the bonding material and epoxy for the encapsulant of Moline, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Response to Arguments

Applicant's arguments filed 05-06-04 have been fully considered but they are not persuasive.

Applicant argues (1) that Moline does not disclose coupling a plurality of wires from said device package to one of said connector. The examiner disagrees. With respect to (1), Moline disclose coupling a plurality of wires (26, 26') from said device package (20) to one of said connector (12, 14)(as best shown in Fig 2)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire ~~THREE~~ MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung V Ngo whose telephone number is (571) 272-1979. The examiner can normally be reached on Monday to Thursday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A Reichard can be reached on (571) 272-2800 EXT 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Hung V. Ngo

July 26, 2004

Hung V Ngo

HUNG V. NGO
PRIMARY EXAMINER